

# INTERNATIONAL SEARCH REPORT

T/US2004/033436

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 F16K11/074 F16K3/10

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 F16K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 701 934 A (KURAN CHRISTOPHER G ET AL) 30 December 1997 (1997-12-30) column 3, line 21 - column 8, line 39; figures 1-8	1,7,8
X	DE 37 20 207 A (PIEMONTESE RADIATORI) 23 December 1987 (1987-12-23) column 4, line 54 - column 8, line 16; figures 1-7	1
A	EP 1 293 712 A (SOLDI BARBARA) 19 March 2003 (2003-03-19) figures 1,2	1
A	EP 1 342 996 A (TECHEM DEV GMBH) 10 September 2003 (2003-09-10) figures 1-5	1
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
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- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*Z\* document member of the same patent family

Date of the actual completion of the international search

20 January 2005

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07/02/2005

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PCT/US2004/033436

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 771 980 A (GALATRON SRL) 7 May 1997 (1997-05-07) figures 1-14	1
A	EP 1 096 189 A (NGK SPARK PLUG CO) 2 May 2001 (2001-05-02) figures 1-8d	1

# INTERNATIONAL SEARCH REPORT

Information on patent family members

IT/US2004/033436

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5701934	A	30-12-1997	NONE	
DE 3720207	A	23-12-1987	IT 1192006 B DE 3720207 A1 FR 2600394 A1	31-03-1988 23-12-1987 24-12-1987
EP 1293712	A	19-03-2003	IT MI20011936 A1 EP 1293712 A2	14-03-2003 19-03-2003
EP 1342996	A	10-09-2003	DE 20203850 U1 EP 1342996 A2	20-06-2002 10-09-2003
EP 0771980	A	07-05-1997	IT UD950218 A1 AU 714977 B2 AU 7057496 A EP 0771980 A1 NZ 299670 A US 5853023 A	05-05-1997 13-01-2000 08-05-1997 07-05-1997 26-08-1998 29-12-1998
EP 1096189	A	02-05-2001	JP 2001124220 A EP 1096189 A1	11-05-2001 02-05-2001